Programme Specification

BSc (Hons) Information Technology

1. Programme title	**BSc (Hons) Information Technology**
2. Awarding institution	Middlesex University
3. Teaching institution	Middlesex University
4. Details of accreditation by professional/statutory/regulatory body	
5. Final qualification	BSc Honours
6. Year of validation **Year of amendment**	
7. Language of study	English
8. Mode of study	Full Time + Part Time + Thick Sandwich

9. Criteria for admission to the programme

We normally make offers on a minimum of 240 UCAS tariff points, plus GCSE Maths and English Language at grade C. BTEC National Diploma/International Baccalaureate/Advanced Progression Diplomas at equivalent tariff. Access to HE - Pass. Applications from candidates without formal qualifications are welcomed.

The most common English Language requirements for international students are IELTS 6.0 (with minimum 5.5 in all four components) or TOEFL internet based 72 (with at least 17 in listening & writing, 20 in speaking and 18 in reading).

Middlesex also offers an Intensive Academic English course (Pre- Sessional) that ranges from 5-17 weeks depending on your level of English. Successful completion of this course would meet English language entry requirements.

Applicants holding academic, vocational or professional qualifications at an appropriate level may be admitted with specific credit, which will and students can receive advice and support in preparing their application count towards the target qualification, to an appropriate point on a programme.

The University also considers applications from students with subject knowledge and skills gained through practice, who may not have formal qualifications. Each case is considered individually and students can receive advice and support in preparing their applications.

10. Aims of the programme

The programme aims to provide you with an understanding of how IT systems can be used to support the activities of a wide range of organisations. You will learn how a modern enterprise works and how to use a wide range of technologies to support its operation. The content is structured in ways that map explicitly on to modern technology, and includes systems design, application development in a modern industrial strength programming language, network functionality and management and web-application development including both server and client side programming.

In your first year you will develop an understanding of organisations and foundational technology skills including an introduction to programming. In your second year you will build on these foundations to introduce technology areas such as architecture design, networking and web-applications. In the first two years you will also develop report writing and presentation skills to allow you communicate and justify your ideas to a wide audience.

In the third year you will have the opportunity to take an optional placement year in a computer-based industry. Students who choose to complete a placement year, are supported by the University in terms of help finding placements, regular visits and on-line support. To support you financially while you benefit from industry experience, we will cover your tuition fees for the year.

In the final year of your degree, you'll be able to choose from a wide range of specialist topics in information technology in addition to undertaking an individual project with a project supervisor who is a leader in their field.

Teaching is delivered as a mixture of lectures in state of the art lecture theatres, group tutorials, laboratory work, group and individual projects, with opportunities for work-based learning

11. Programme outcomes

A. Knowledge and understanding

On completion of this programme the successful student will have knowledge and understanding of:

- Essential facts, concepts, principles and theories relating to a range of programming and development paradigms. (BCS)
- The use of scientific principles in the creation, use and support of information systems for the solution of practical problems, founded on appropriate technological disciplines. (BCS)
- The legal, social, ethical and professional issues involved in the exploitation of computer technology and in the adoption of appropriate professional and ethical and legal practices.

Teaching/learning methods

Students gain knowledge and understanding through practical work that allows the exposure and exploration of underpinning theory and concepts. Guided reading and online content support students in developing their understanding of the subject area. An emphasis on formative feedback and tasks is built into all the first year modules and may include participation in online activities, in order to practice and explore the topics covered in classes more fully.

In the first year outcomes are assessed at an introductory level.

Assessment Methods

Students' knowledge and understanding is assessed by a range of activities that include both formative (developed to provide feedback on learning) and summative (graded) tasks. A wide range of assessment methods are used.

(BCS) • Various strategies and development plans, policies and processes for the accounting, budgeting and, where applicable, charging of IT resources and services. (SFIA) • Strategies for effective use of information technology to include databases and web technology and, taking account of the complex interrelations between hardware, software and people. (SFIA) • Information security issues in relation to the design, development and use of information systems. (BCS)	*Tasks may involve traditional approaches such as case studies, essays, presentations and logbooks, time constrained tests and exams, and some less traditional approaches such as blogging and video stories*
B. Cognitive (thinking) skills On completion of this programme the successful student will be able to: 1. Recognise and analyse criteria, critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions - to a problem. (BCS and QAA) 2. Deploy appropriate theory, practices and tools for the specification, design, implementation and evaluation of computer-based systems. (BCS and SFIA) 3. Reflect on wider context of IT practice in organisations and society. (SFIA) 4. Apply the methods and techniques to review, consolidate, extend and apply knowledge and understanding, and to initiate and carry out projects. (QAA)	**Teaching/learning methods** In year one students gain cognitive skills through working with a wide range of case studies and practical exercises chosen to encourage decision making or exploration of ideas. Class discussions and writing develop the reflective practitioner approach required in the IT profession. In year two there is more emphasis on analytical skills and all of the cognitive abilities are assessed at an appropriate level. For example students will use a wide range of evaluation techniques across different modules including user-focused approaches. Year three students are expected to demonstrate that they are independent learners and are capable of working in a professional manner as an IT practitioner. **Assessment methods** Students' cognitive skills are assessed in a range of reflective writing exercises, in the choice and range of solutions given for solving a given problem and in project work. Students gain cognitive skills through the Programme, gradually

	developing them to the requirements of an IT practitioner with an emphasis on a professional approach to practice. *Group and individual work may require students to direct their own study but this will always be under the guidance of a named tutor.*
C. Practical skills On completion of the programme the successful student will be able to: 1. Demonstrate analytical thinking skills with powers of practical problem solving and the ability to see the wider picture. (SFIA) 2. Demonstrate practical competencies for specifying, designing and constructing effective implementation strategies for computer- based systems consistent with range of business wide needs including those found in industry. (BCS) 3. Demonstrate practical competencies for specifying user/system interfaces, and translating logical designs into physical designs taking account of target environment, performance requirements and existing systems. (SFIA) 4. Demonstrate practical competencies for identifying and managing resources necessary for all stages – analysis, planning, estimation, execution and improvement - of individual systems development to ensure technical, financial and quality targets are met. (SFIA) Demonstrate practical competencies in the development, use or operation of database web management system tools and facilities and also in the selection, provision and use of database architectures, software and facilities. (SFIA) 6. Demonstrate the ability to	***Teaching/learning methods*** Students gain practical skills through laboratory work and a range of exercises undertaken in lectures, seminars and workshops. On-line tasks may need to be completed outside of the task to ensure that sufficient practice takes place to reinforce the taught lessons. ***Assessment Method*** Students' practical skills are assessed by a wide range of activities which would include, report writing and logbooks, software and hardware development, quizzes and tests, the production of reports and examinations. Some work may require presentations and vivas.

recognise any risk and safety aspects that may be involved in the operation of computing equipment within a given context. (BCS) .	
D. Graduate skills On completion of this programme the successful student will be able to: Demonstrate behavioural competencies – the ability to work as a member of team and recognise the different roles within a team. (SFIA and CBI) Demonstrate communication competencies - the ability to form effective dialogue with various stakeholders (a range of audiences) in electronic as well as written and oral forms. (BSC and CBI) Demonstrate personal professional development and management competencies - the ability to initiate, plan, schedule and monitor own work and manage own learning, and to make use of scholarly reviews and primary sources. (QAA and CBI) Demonstrate numerical competencies – the ability to apply mathematical methods, tools and notations proficiently in the analysis and solution to problems. (BCS and CBI) Demonstrate analytical competencies - the ability to deconstruct a problem or situation and also appreciate the uncertainty, ambiguity and limits of knowledge. (QAA and CBI) Demonstrate creative thinking competencies – the ability to be original or inventive and to apply lateral thinking (CBI	**Teaching/learning methods** *Personal and Career Development* Students will be exposed to areas of the subject via the broad scope of the first year curriculum and this will expose them to an understanding of the range of opportunity that exists. A number of careers events give students the ability to meet and question employers and alumni. Students will be encouraged to take projects in the third year that will assist them in finding employment in their chosen area. Effective Learning Students will be using strategies for planning their work from year one; this will involve individual pieces of work, group work and the development of strategies for time management. Students will be required to show how they have responded to formative feedback by changing their practice. This will also assist in developing a reflective approach to learning. Students will be expected to make use of a variety of resources appropriately referenced. By year three the student will be able to demonstrate an awareness of their own learning and will be able to independently plan their own project, showing a reflective approach to understanding how they developed their own knowledge and skills. Communication All student work requires the students to convey information and ideas in an appropriate structured manner using a good standard of English and correct referencing strategies. From year one, students develop the ability to retrieve information from a range of resources and will be expected to work with the material to develop skills of précis and to

	use material to support arguments or justify decisions. All students in this Programme will be involved in peer evaluation as part of their assessment. Students are expected to take part in oral presentations, on-line dissemination of media and role-play as part of developing these skills and to develop the confidence to meet the communication challenges of the future. Teamwork Students will be expected to work in teams across all years with activities explicitly assessed in some modules. Information Technology All students will be using IT skills across all modules and will be expected to be able to use a wide range of software tools and to use them in an appropriate way. This includes the use of online tools and resources and includes website design and the ability to design IT systems. Students will also be expected to have a strong understanding of the legal and ethical requirements of IT systems and this is assessed in year two and in the project. Numeracy Students develop numeracy skills specific to the subject area and develop these in order that they can work with a variety of data formats, present information succinctly and analyse a range of quantitative data of results in a meaningful way. **Assessment methods** Students' graduate skills are assessed by a wide range of activities including quizzes and tests, short written assignments, essays, practical projects, the production of software and reports, and examination. Some assessment will include on-line components and may involve presentations and vivas. .

12. Programme structure (levels, modules, credits and progression requirements)

12. 1 Overall structure of the programme

The course may be studied in three modes:

1. Three years full-time, 100% University-based.
2. Part-time students study over longer periods, depending on the proportion of full-time to part-time study.
3. Four years full-time 'thick-sandwich', where one complete year is an industry placement (so 75% is University-based and 25% is industry- based).

Details of the thick-sandwich industry placement year (usually taken between Levels 5 and 6) are given in the 'Supervised Industrial Placement in School of Science and Technology' Module Narrative, module code CMT3355 in the School of Science and Technology Subject Handbook. Students may transfer between these modes if required. Key features of the Programme are: The course is undertaken at three Levels, 4, 5 and 6. Each Level is arranged as a single academic year of 24 weeks duration. There are two 'entry points' to the programme: September (Autumn term) and January (Winter term dependent upon location and demand). In both cases, a single academic year of 24 weeks duration commences from the time of the entry point.

The course is divided into study units called modules. Each module has a credit value of 30 credits. Each 30-credit module represents approximately 360 hours of student learning, endeavour and assessment including up to a maximum of 72 hours of teaching. Each Level comprises four compulsory modules, such that each Level of the programme comprises 120 credits. Levels 4, 5 comprise four compulsory modules. Level 6 consists of one compulsory project module and three optional taught modules

12.2 Levels and modules

Level 4 (1)

COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS

Students must take all of the following: 1. ITX1300 Introduction to Programming 2. CSD1200 Information in Organisations 3. ITX1000 Emerging Technologies in Practice 4. BIS1201 Information Systems Foundations		
Level 5 (2)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all of the following: • ITX2000 Remote Hosts and Webservers • ITX2020 IT Infrastructure • CSD2500 Web Development • BIS2300 Information Systems Analysis and Design		.
Level 6 (3)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS

Students must take all of the following: Students must take all of the following: ITX3999 IT Project Module	1. CSD3939 Artificial Intelligence 2. CSD3950 AI Techniques in Information Management 3. BIS3400 Social, Professional and Ethical Issues in Information Systems 4. BIS3350 Innovation and Technology Management 5. CSD3700 Digital Multimedia Engineering 6. BIS3300 Strategic Management and Information Systems 7. CSD3820 Human Factors in Design 8. BIS3360 Healthcare Business Informatics 9. CSD3600 Open Source Software BIS3370 Systems Development Methodologies	

12.3 Non-compensatable modules (note statement in 12.2 regarding FHEQ levels)	
Module level	**Module code**
6	*ITX3999 IT Project module*

13. Curriculum map

See attached.

14. Information about assessment regulations

- Information on how the University formal assessment regulations work, including details of how award classifications are determined, can be found in the University Regulations at www.mdx.ac.uk/regulations/.
- Practical aspects of the programme are often assessed via coursework that may be carried out using specialist software and may include lab tests.
- Theoretical material is assessed by coursework and examinations.
- Grades are awarded on the standard University scale of 1–20, with Grade 1 being the highest. To pass a module all components, both coursework and examination, must be passed individually with a minimum grade of 16. Failure in one of the components will result in the failure of the module.

For additional information on assessment and how learning outcomes are assessed please refer to the individual module narratives for this programme.

15. Placement opportunities, requirements and support (if applicable)

All Undergraduate students have the opportunity to go on Industrial Placement. Industrial Placements are encouraged as this valuable experience enhances a student's future career prospects. Additionally students normally achieve better results in their final year. In brief:

- The placement provides a years experience as an appropriately paid graduate trainee.
- Industrial placement is conditional on the successful completion of all modules at Level 4 and Level 5, therefore students need 240 credits before they are able to embark on an industrial placement.
- Obtaining a placement is co-ordinated through the Campus Placement Office.
- For Undergraduate programmes, students wishing to undertake a placement position must register for CMT3985.
- Each placement will be assigned to an industrial tutor who will visit the student on placement.
- On graduation the degree will be qualified with the term "…with approved industrial experience".

The placement option is not available to direct-entry students in their final year.

16. Future careers (if applicable)

Students will be equipped to enter a wide range of IT and Computing related careers. Specialist careers staff hold regular events to allow students the opportunity to identify areas that are of interest to them.

17. Particular support for learning (if applicable)

As Existing Handbook

18. JACS code (or other relevant coding system)	Computing
19. Relevant QAA subject benchmark group(s)	

20. Reference points

QAA - The framework for higher education qualifications in England, Wales and Northern Ireland (FHEQ) (August 2008)

BCS - Guidelines on course accreditation: Information for universities and colleges September 2010, updated for use from Autumn 2012.

Available at http://www.bcs.org/category/7066

21. Other information

Curriculum map for BSc Information Technology

This section shows the highest level at which programme outcomes are to be achieved by all graduates, and maps programme learning outcomes against the modules in which they are assessed.

Programme learning outcomes

Knowledge and understanding		**Practical skills**	
A1	Essential facts, concepts, principles and theories relating to a range of programming and development paradigms.	C1	Demonstrate analytical thinking skills with powers of practical problem solving and the ability to see the wider picture.
A2	The use of scientific principles in the creation, use and support of information systems for the solution of practical problems, founded on appropriate technological disciplines.	C2	Demonstrate practical competencies for specifying, designing and constructing effective implementation strategies for computer-based systems consistent with wide range of needs including those found in industry.
A3	The legal, social, ethical and professional issues involved in the exploitation of computer technology and in the adoption of appropriate professional and ethical and legal practices.	C3	Demonstrate practical competencies for specifying user/system interfaces, and translating logical designs into physical designs taking account of target environment, performance requirements and existing systems.

A4	Various strategies and development plans, policies and processes for the accounting, budgeting and, where applicable, charging of IT resources and services.	C4	Demonstrate practical competencies for identifying and managing resources necessary for all stages – analysis, planning, estimation, execution and improvement - of individual systems development to ensure technical,

			financial and quality targets are met.
A5	Strategies for effective use of information technology to include databases and web technology and, taking account of the complex interrelations between hardware, software and people.	C5	Demonstrate practical competencies in the development, use or operation of database web management system tools and facilities and also in the selection, provision and use of database architectures, software and facilities.
A6	Information security issues in relation to the design, development and use of information systems.	C6	Demonstrate the ability to recognise any risk and safety aspects that may be involved in the operation of computing equipment within a given context.
Cognitive skills		**Graduate Skills**	
B1	Recognise and analyse criteria, critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions - to a problem.	D1	Demonstrate behavioural competencies – the ability to work as a member of team and recognise the different roles within a team.
B2	Deploy appropriate theory, practices and tools for the specification, design, implementation and evaluation of computer-based systems.	D2	Demonstrate communication competencies - the ability to form effective dialogue with various stakeholders (a range of audiences) in electronic as well as written and oral forms.
B3	Reflect on wider context of IT practice in organisations and society.	D3	Demonstrate personal professional development and management competencies - the ability to initiate, plan, schedule and monitor own work and manage own learning, and to make use of scholarly reviews and primary sources.

B4	Apply the methods and techniques to review, consolidate, extend and apply knowledge and	D4	Demonstrate numerical competencies – the ability to apply mathematical methods, tools and

	understanding, and to initiate and carry out projects.		notations proficiently in the analysis and solution to problems.
B5		D5	Demonstrate analytical competencies - the ability to deconstruct a problem or situation and also appreciate the uncertainty, ambiguity and limits of knowledge.
B6		D6	Demonstrate creative thinking competencies – the ability to be original or inventive and to apply lateral thinking

Programme outcomes																									
A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6	D7
Highest level achieved by all graduates																									
6	6	5	6	5	6		6	5	5	6			5	6	5	5	5	5	5	5	6	5	6	6	

Module Title	Module Code and Level	Programme outcomes																									
		A 1	A 2	A 3	A 4	A 5	A 6	A 7	B 1	B 2	B 3	B 4	B 5	B 6	C 1	C 2	C 3	C 4	C 5	C 6	D 1	D 2	D 3	D 4	D 5	D 6	D 7
Introduction to Programming	ITX1300 (4)	✓	✓						✓						✓								✓	✓	✓		
Information in Organisations	CSD1200 (4)																										
Information Systems Foundations	BIS1201 (4)	✓	✓			✓			✓	✓	✓				✓	✓			✓				✓	✓	✓		
Emerging Technologies in Practice	ITX1000 (4)																										
Remote Hosts and Webservers	ITX2000 (5)		✓	✓							✓					✓	✓		✓		✓	✓					
			✓	✓					✓	✓						✓	✓			✓	✓	✓	✓		✓	✓	
			✓			✓	✓			✓						✓			✓				✓		✓	✓	
Web Development	CSD2500 (5)	✓	✓			✓			✓	✓		✓							✓			✓	✓		✓	✓	
IT Infrastructure	ITX2020 (5)			✓	✓		✓				✓	✓			✓			✓		✓		✓		✓			
Information Systems Analysis and Design	BIS2300 (5)	✓							✓	✓							✓				✓	✓	✓				
Placement Year			✓							✓		✓			✓			✓			✓	✓		✓	✓		

~~Digital Multimedia~~ Engineering	~~CSD3700~~ (6) ~~CSD3820~~ (6)	✓	✓			✓					✓	✓			✓	✓					✓		✓	✓			
Human Factors in Design	~~BIS3300~~ (6) ~~BIS3350~~ (6)	✓							✓					✓		✓			✓	✓	✓					✓	
Strategic Management & Information Systems ~~Innovation and Technology Management~~					✓				✓					✓			✓		✓	✓	✓	✓		✓			
					✓						✓			✓			✓				✓	✓		✓	✓		